

of formation of a collection of stars in an indefinite homogeneous nebula.—L. and E. Bloch: The spark spectra of some elements in the extreme ultra-violet. Details of the spark spectra of antimony, arsenic, bismuth, and tin between the limits 1850 and 1400 Ångström units.—G. Bruhat: The specific heat of saturated vapours at low temperatures. Reply to some criticisms of M. Ariès.—P. Vaillant: The existence of intermediate states in the phosphorescence of calcium sulphide deduced from its conductivity.—P. Théodorides: The thermal variation of the coefficient of magnetisation in anhydrous sulphates, and the theory of the magneton. The results of magnetic measurements on the sulphates of manganese, cobalt, and iron at varying temperatures are given. These are in general agreement with the magneton theory.—A. Dauvillier: A new theory of photographic phenomena. In a recent communication the author developed a new theory of the chemical action of cathode, β , X, γ , and ultra-violet rays. The production of photographic images is considered from the same point of view.—L. Dubreuil: Determination of the number of independent constituents of a system of bodies.—R. Fosse: The micro-chemical qualitative analysis of cyanic acid. The method is based on the crystallisation of silver cyanate from hot water. After examining the forms of the crystals, they may be used for several colour reactions.—P. W. Stuart-Menteath: The tectonic of the Pyrenees.—G. F. Dollfus: The geological probabilities of discovering petroleum in France. A summary of the trial borings made in various parts of France for coal, potash, and oil. The outlook is generally unfavourable except in the valley of the Saône.—P. Négris: Considerations on the Glacial period. In an earlier communication the author was led to attribute the invasion by ice and its retreat to epirogenic movements. Further direct evidence of these movements is now given.—A. Lepape: The radio-active analysis of the thermal springs of Bagnères-de-Luchon. Some of the springs are rich in radium emanations, figures of 26.5, 31.6, and 41.5 millimicrocuries of emanation per litre of water being recorded.—H. Ricôme: The orientation of branches of plants in space.—L. Emberger: Cytological studies of the sexual organs of ferns.—M. and Mme. G. Villedieu: The non-toxicity of copper for moulds in general and for mildew in particular. Copper in the form of copper-ammonio-citrate does not interfere with the growth of the spores of *Penicillium* or mildew.—M. Nicolle and E. Césari: The effects and constitution of the antigens.—A. Lumière and J. Chevrolier: A simple and inoffensive method of avoiding anaphylactic shock. Starting with the hypothesis that anaphylactic shock is due to the formation of a solid precipitate in the blood plasma, experiments have been made *in vitro* on mixtures of sera capable of giving flocculent precipitates. Various reagents were added to these tubes with the view of discovering a substance capable of preventing the flocculation. Of the large number of reagents tested very few were found to possess the required property, and of these sodium hyposulphite was the most suitable. Experiments on animals showed that this substance was capable of preventing anaphylactic shock, and it was further proved that sodium hyposulphite did not appear to destroy, or even to attenuate, antitoxic sera.—G. Bertrand and R. Vladesco: The distribution of zinc in the horse. Twenty-three organs of the horse have been examined for zinc, the quantities found varying from 12.2 to 98 milligrams per 100 grams of dried material. Zinc was found in every organ examined, and the proportion varied not only from one organ to another, but also in the same organ or tissue

in different individuals.—A. Némec and V. Kás: The favourable influence of selenium on some moulds arising from the cheese industry.—J. L. Dantan: The development of the *Antipathella*.—M. Delphy: The reproduction of *Enchytraeoides enchytraeoides* and *Clitellio arenarius*.—V. Galippe: Researches on the presence of living organisms in cretaceous, ferruginous, pyritic, and siliceous fossils.—A. Paillot: Immunity in insects.

Books Received.

- Proceedings of the Aristotelian Society. New Series. Vol. xx. Containing the Papers read before the Society during the Forty-first Session, 1919-20. Pp. iv+314. (London: Williams and Norgate.) 25s. net.
- The Fringe of Immortality. By Mary E. Monteith. Pp. xv+204. (London: J. Murray.) 6s. net.
- An Introduction to String Figures. By W. W. Rouse Ball. Pp. 38. (Cambridge: W. Heffer and Sons, Ltd.) 2s.
- Où en Est la Météorologie. By Prof. A. Berget. Pp. vi+303. (Paris: Gauthier-Villars et Cie.)
- The Volatile Oils. By E. Gildemeister and Fr. Hoffmann. Second edition. Authorised translation by E. Kremers. Vol. ii. Pp. xx+686. (London: Longmans, Green and Co.) 32s. net.
- A Course of Modern Analysis. By Prof. E. T. Whittaker and Prof. G. N. Watson. Third edition. Pp. vii+608. (Cambridge: At the University Press.) 40s. net.
- Electricity and Magnetism: Theoretical and Practical. By Dr. C. E. Ashford. Third edition. Pp. xii+303. (London: E. Arnold.) 4s. 6d.
- A Treatise on Airscrews. By W. E. Park. Pp. xii+308. (London: Chapman and Hall, Ltd.) 21s. net.
- First Lessons in Geography. By E. Marsden and T. A. Smith. Pp. 185. (London: Macmillan and Co., Ltd.) 3s. 6d.

Diary of Societies.

THURSDAY, NOVEMBER 11.

- ROYAL SOCIETY, at 4.30.—Dr. W. G. Ridewood: The Calcification of the Vertebral Centra in Sharks and Rays.—Dr. A. Compton: Studies in the Mechanism of Enzyme Action. I. *Role of the Reaction of the Medium in fixing the Optimum Temperature of a Ferment*.—C. H. Kellaway: The Effect of certain Dietary Deficiencies on the Suprarenal Glands.—E. J. Collins: The Genetics of Sex in *Funaria hygrometrica*.
- LONDON MATHEMATICAL SOCIETY (at Royal Astronomical Society), at 5 (Annual General Meeting).—J. E. Campbell: Einstein's Theory of Gravitation as an Hypothesis in Differential Geometry (Presidential Address).—H. Bateman: The Conformal Transformations of a Space of Four Dimensions.—F. Bowman: (1) The Differentiation of the Complete Third Elliptic Integral with Respect to the Modulus; (2) Note on the Intersection of a Plane Curve and its Hessian at a Multiple Point.—T. S. Broderick: Dirichlet Multiplication of Infinite Series.—L. E. Dickson: Arithmetic of Quaternions.—P. J. Heawood: The Classification of Rational Approximations.—E. L. Ince: Integral Solutions of Ordinary Linear Differential Equations.—C. Jordan: The Series of Polynomials, every Partial Sum of which approximates n Values according to the Method of Least Squares.—H. J. Priestley: Some Solutions of the Wave Equation.—H. Steinhaus: An Example of a Thoroughly Divergent Orthogonal Development.—N. Wiener: The Group of the Linear Continuum.—G. S. Young: The Partial Derivates of a Function of Many Variables.
- ROYAL COLLEGE OF PHYSICIANS OF LONDON, at 5.—Dr. E. G. Browne: Arabian Medicine after Avicenna (FitzPatrick Lecture).
- ROYAL COLLEGE OF SURGEONS OF ENGLAND, at 5.—Sir D'Arcy Power: The Education of a Surgeon under Thomas Vicary (Thomas Vicary Lecture).
- ROYAL SOCIETY OF MEDICINE, at 6.30.—Sir Almroth Wright: Medical Research, and the conditions that are indispensable to the achievement of new knowledge.
- OPTICAL SOCIETY, at 7.30.—Major F. O. Henrieli: The Use of Internal Focussing Telescopes for Stadia Surveying.—Dr R. J. E. Hanson: Visual Fatigue and Eye Strain in the Use of Telescopes.
- ROYAL SOCIETY OF MEDICINE (Neurology Section), at 8.30.—Dr. H. Head, Dr. J. Collier, and Others: Discussion on Aphasia.

FRIDAY, NOVEMBER 12.

- INSTITUTE OF CHEMISTRY, at 4.—To Receive Report of the Extraordinary General Meeting of October 28 and confirm the Resolutions and By-laws passed thereat.
- PHYSICAL SOCIETY OF LONDON (at Imperial College of Science), at 5.—Dr. P. S. Goucher: Ionisation and Excitation of Radiation by Electron Impact in Helium.—J. Guild: Fringe Systems in Uncompensated Interferometers.—J. Guild: The Location of Interference Fringes.—Dr. G. Barr: A New Relay for Moderately Heavy Currents.
- ROYAL ASTRONOMICAL SOCIETY, at 5.—Rev. J. G. Hagen: Differences between Long-period and Short-period Variables.—J. H. Reynolds: The Galactic Distribution of the large Spiral Nebulae.—W. S. Franks: Micrometrical Measures of 202 Double Stars.—F. E. Baxandall: The Presence of Absorption Lines of Nitrogen and Oxygen in the Spectra of Nova Aquilae 111.—J. van der Bilt: Observations of Minor Planets made with the 10-in. Refractor of the University Observatory, Utrecht, Holland.—W. J. S. Lockyer and D. L. Edwards: Spectroscopic and Magnitude Observations of Nova Cygni 111, 1920.—G. F. Dodwell: Note on the Longitude of Adelaide.—J. Evershed: Recent Work at Kodaikanal Observatory.
- ROYAL SOCIETY OF MEDICINE (Clinical Section), at 5.30.—Dr. F. Parkes Weber: Chronic Myeloid Leukemia—Death from Acute Anemia due to Massive Hemorrhages (Hæmatomata), Simulation of Slight Pyuria by Leukemic Oozing in the Urine.—Z. Cope: Diaphragmatic Shoulder Pain.
- INSTITUTION OF MECHANICAL ENGINEERS, at 7.—Informal Meeting.
- JUNIOR INSTITUTION OF ENGINEERS (at Caxton Hall), at 8.—R. H. Squire: Hydraulic Sand Packing and Colliery Workings in India.
- ROYAL SOCIETY OF MEDICINE (Ophthalmology Section), at 8.30.—Dr. J. Taylor: Some Neurological Aspects of Ophthalmic Cases (Presidential Address).—P. Smith: The Blood-vessels in the Eye of the Ox.

MONDAY, NOVEMBER 15.

- ROYAL BOTANIC SOCIETY, at 3.—Prof. A. W. Bickerton: The Relations of Astronomy to Botany. (1) The Importance of Scientific Correlation.
- ROYAL GEOGRAPHICAL SOCIETY (at Lowther Lodge), at 5.—Prof. H. E. Schwarz: The Control of Climate by Lakes.
- INSTITUTION OF ELECTRICAL ENGINEERS (Informal Meeting) (at Chartered Institute of Patent Agents), at 7.—Lt. B. Atkinson and Others: Discussion.
- ROYAL INSTITUTE OF BRITISH ARCHITECTS, at 8.—R. Dircks: The Library of the Royal Institute of British Architects.

TUESDAY, NOVEMBER 16.

- ROYAL HORTICULTURAL SOCIETY, at 3.
- ROYAL COLONIAL INSTITUTE (at Hotel Victoria), at 4.—G. Howell: Petroleum Resources of the British Empire.
- ROYAL SOCIETY OF MEDICINE (Therapeutics and Pharmacology Section), at 4.30.—Major Acton: Pharmacological Actions of the Main Cinchona Alkaloids, illustrating their Isomeric Relationships.—Dr. W. E. Dixon: Quinine Derivatives as Local Anesthetics.—Dr. W. Crowe: The Vaccine Treatment of Rheumatoid Arthritis.—Drs. W. E. Dixon and D. Cow: Pituitrin-like Body in the Cerebro-spinal Fluid, and Hormones which cause its appearance therein.
- ROYAL STATISTICAL SOCIETY, at 5.15.—Sir R. Henry Rew: The Organisation of Statistics (Inaugural Presidential Address).
- INSTITUTION OF CIVIL ENGINEERS, at 5.30.—F. W. Macaulay: Cross Connections on the Elan Aqueduct of the Birmingham Corporation Waterworks.
- INSTITUTION OF PETROLEUM TECHNOLOGISTS (at Royal Society of Arts), at 5.30.—L. W. Bates: Colloidal Fuel.—H. O'Neill: Properties and Characteristics of Colloidal Fuel.
- ZOOLOGICAL SOCIETY OF LONDON, at 5.30.—Dr. P. Chalmers Mitchell: Report on the Additions to the Society's Menagerie during the month of October.—Dr. W. A. Cunningham: The Fauna of the African Lakes: A Study in Comparative Limnology, with special reference to Tancanyika.—H. F. Carter: Description of the Adult, Larval, and Pupal Stages of a new Mosquito from Lord Howe Island, South Pacific.—Dr. C. L. Boulenger: Filariid Worms from Mammalia and Birds in the Society's Gardens, 1914-1915.
- ROYAL SOCIETY OF MEDICINE (Pathology Section), at 8.30.—Dr. H. Schutze: Blood Grouping with Dried Material and its Medical-legal Bearing.—Dr. J. A. Murray: Autoplasty after Exposure to Hot Air.—Dr. A. Powell: A Flagellate Organism persisting for Six Years in otherwise Sterile Urine.

WEDNESDAY, NOVEMBER 17.

- ROYAL SOCIETY OF MEDICINE (History of Medicine Section), at 5.—J. Berry: A Public Latrine of Roman Imperial Time.—Dr. M. Greenwood: Galen as an Epidemiologist.
- GEOLOGICAL SOCIETY OF LONDON, at 5.30.
- ROYAL SOCIETY OF ARTS, at 8.—A. A. Campbell Swinton: Wireless Telegraphy and Telephony (Inaugural Address).
- ROYAL METEOROLOGICAL SOCIETY, at 8.—C. E. P. Brooks and H. W. Braby: The Clash of the Trades in the Pacific.—Dr. W. H. Stevenson: Note on the Mirage, as observed in Egypt.
- ROYAL MICROSCOPICAL SOCIETY, at 8.

THURSDAY, NOVEMBER 18.

- ROYAL BOTANIC SOCIETY, at 3.—Prof. A. W. Bickerton: The Relations of Astronomy to Botany. (2) The Value of Basic Principles.
- ROYAL SOCIETY, at 4.30.—*Probable Papers*: Sir Arthur Schuster: The Absorption and Scattering of Light.—Prof. O. W. Richardson: The Emission of Electrons under the Influence of Chemical Action.—Dr. A. E. Oxley: Magnetism and Atomic Structure. I.—Prof. A. O. Rankine: The Proximity of Atoms in Gaseous Molecules.—

Prof. A. O. Rankine: The Similarity between Carbon Dioxide and Nitrous Oxide.—Dr. A. M. Williams: Forces in Surface Films. Part I, Theoretical Considerations; Part II, Experimental Observations and Calculations; Part III, The Charge on Colloids.

LINNEAN SOCIETY, at 5.—Prof. E. S. Goodrich: A New Type of Teleostean Cartilaginous Pectoral Girdle found in young Clupeids.—Dr. J. C. Willis: Endemic Genera and Species of Plants.

- ROYAL AERONAUTICAL SOCIETY (at Royal Society of Arts), at 5.—L. Damblanc: The Problem of the Helicopter.
- ROYAL SOCIETY OF MEDICINE (Dermatology Section), at 5.
- INSTITUTION OF MINING AND METALLURGY (at Geological Society), at 5.30.—J. Morrow Campbell: The Origin of Primary Ore Deposits (Adjourned Discussion).—H. O. Robson: Converting High-grade Matte in Magnesite-lined Converters.—C. Brackenbury: An Automatic Counting Machine for Checking Tram Wagons.
- INSTITUTION OF ELECTRICAL ENGINEERS (at Institution of Civil Engineers), at 6.—Lt. B. Atkinson: Inaugural Address.
- INSTITUTION OF AUTOMOBILE ENGINEERS, at 8.—London Graduates' Meeting.
- CHEMICAL SOCIETY, at 8.
- ROXTON SOCIETY (in Physics Lecture Theatre, University College, Gower Street), at 8.15.

FRIDAY, NOVEMBER 19.

- ROYAL SOCIETY OF MEDICINE (Otolaryngology Section), at 5.—Sir William Milligan: Chronic Catarrhal Otitis Media; Some Thoughts and Suggestions.
- INSTITUTION OF MECHANICAL ENGINEERS, at 6.—Capt. J. S. Arthur: Sterilisation of Water by Chlorine Gas.
- INSTITUTION OF ELECTRICAL ENGINEERS (Students' Section) (at City and Guilds (Eng.) College, Exhibition Road), at 6.30.—C. O. Paterson: The Incandescent Electric Lamp from the Inside.
- ROYAL SOCIETY OF MEDICINE (Electro-Therapeutics Section), at 8.30.—Discussion: Radio-therapy: Prof. S. Russ: Physics.—Dr. Batten: Superficial Therapy.—Dr. Finzi: Deep Therapy.

SATURDAY, NOVEMBER 20.

- PHYSIOLOGICAL SOCIETY (at St. Bartholomew's Hospital), at 4.

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